UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,689	08/25/2003	Peter W. Richards	P105-US	3780

23494 7590 08/25/2006

TEXAS INSTRUMENTS INCORPORATED
P O BOX 655474, M/S 3999
DALLAS, TX 75265

EXAMINER	
MENGISTU, AMARE	
ART UNIT	**PAPER NUMBER**
2629	

DATE MAILED: 08/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/648,689	RICHARDS, PETER W.	
	Examiner	Art Unit	
	Amare Mengistu	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) *27-96* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14 and 16-26* is/are rejected.

7)☒ Claim(s) *15* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Claims 27-96 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on June 5,2006.

2. Applicant's election without traverse of Group I (claims 1-26) in the reply filed on June 5, 2006 is acknowledged.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

4. Claims 1-14,16-26 are rejected under 35 U.S.C. 102(b) as being anticipated by. **Doherty** (6,201,521 B1).

As to claims 1 and 16, **Doherty ('521)** a spatial light modulator that comprises an array of pixels, wherein the pixels of each row of the array are divided into a plurality of subgroups, for producing an image, the method comprising (col.2, lines 31-35,col.4, lines 6-22):

receiving a set of pixel data streams (fig.1 (11), fig.2 (21)), wherein the pixel data of each stream represent a set of states of a pixel of the spatial light modulator during different time intervals (col.3, lines 54-60);

transforming the received pixel data streams into a set of bitplane data streams wherein the bitplane data of each stream represent the states of a plurality of pixels during one time interval, such that the bitplane data streams representing the pixels of the same subgroup are parallel and adjacent (col.2, lines 35-40).

updating the states of the pixels using the transformed bitplane data (see, col.2, lines 40-50).

As to claim 2, **Doherty** also teaches that the bitplane data representing adjacent pixels of the spatial light modulator are parallel but not adjacent (see, fig.4 "reset group").

In regard to claim 3, **Doherty** discloses that the bitplane data streams representing the odd numbered pixels of the spatial light modulator are parallel and adjacent (see, fig.4 "reset group" 1,3,5,..).

As to claim 4, **Doherty also discloses** the bitplane data streams representing the even numbered pixels of the spatial light modulator are parallel and adjacent (fig.4 "reset group" 0.2.4..).

As to claims 5 and 17, **Doherty** teaches does not teach that the state is selected from

an ON state and an OFF state, and in the ON state, the pixel of the spatial light modulator represents a "bright" pixel of the image, and in the OFF state, the pixel represents a "dark" pixel of the image (However, it is inherent for **Doherty**'s pixel on the ON state to be bright and in the OFF state to be dark).

As to claims 6 and 18, **Doherty** discloses that the value of the pixel data determines the time duration of the pixel in the state (fig.4 "time").

In regard to claims 7 and 19, **Doherty** also discloses that the time intervals are determined according to a pulse-width-modulation technique (see. Col.1, lines 60- col.2, lines 2, col.2, lines 37-43).

As to claims 8 and 20, **Doherty** further discloses that the time intervals are determined according to a binary-weighted pulse-width-modulation technique (see, col.2, lines 35-40).

In regard to claims 9 and 21, **Doherty** disclose storing the transformed bitplane data streams in a frame buffer having a plurality of storage regions such that the bitplane data streams representing the pixels of the same subgroup are stored consecutively in the same region of the frame buffer (see, fig.1 (14), col.3, lines 66- col.4, lines 5).

In regard to claims 10 and 22, **Doherty** teaches that the storing the transformed

bitplane data streams in a frame buffer having a plurality of storage regions such that the bitplane data streams representing the pixels of separate subgroups are stored in different regions of the frame buffer (see, fig.14), col.3, lines 66- col.4, lines 5).

As to claims 11 and 23, **Doherty** also teaches that upon receiving a writing signal, retrieving the bitplane data of the first significance from a first region of the frame buffer; and writing the pixels of the spatial light modulator with the retrieved bitplane data (col.4, lines 1-7).

In regard to claims 12 and 24 **Doherty** states the step of writing the pixels further comprises: activating the pixels using a first wordline (see, col.3, lines 66- col.4, lines 5, fig. 3 first wordline is "the first row").

As to claims 13 and 25 **Doherty** discloses retrieving the bitplane data of the second significance from a second region of the frame buffer; and writing the pixels of the spatial light modulator with the retrieved bitplane data (see, col.3, lines 66- col.4, lines 5).

As to claims 14 and 26 **Doherty** also discloses the step of writing the pixels further comprises: activating the pixels using a second wordline (fig. 3 "second wordline is the second row".

Allowable Subject Matter

5. Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The cited prior art Doherty (6,201,521) has failed to teach applicant's claimed invention "*the pixel comprises a charge pump memory cell that further comprises: a transistor having a source, a gate, and a drain; a storage capacitor having a first plate and a second plate; and wherein the source of said transistor is connected to a bitline, the gate of said transistor is connected to a wordline, and wherein the drain of the transistor is connected to the first plate of said storage capacitor forming a storage node, and wherein the second plate of said storage capacitor is connected to a pump signal*"

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amare Mengistu whose telephone number is (571) 272-7674. The examiner can normally be reached on M-F,M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3639. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Amare Mengistu
Primary Examiner
Art Unit 2629

AM

August 18,2006